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ABSTRACT

The final report describes a 3-year project which had four primary objectives: (1) development of a followup system feasible for schools to use to obtain information on individuals with handicaps who leave school; (2) data collection on three special education samples; (3) data analysis to evaluate long-term effects of secondary programs and feasibility of the follow-up system for school use; and (4) dissemination of research findings and follow-up procedures. The study incorporated descriptive research, comparative research, and longitudinal research and included three primary samples of young adults (total N=87) with moderate to severe handicaps--those just completing school, those who had been out of school for less than 5 years, and those who had been out of school for 8-10 years. Major project activities included a survey of 65 special educators involved with this population and development and application of a followup instrument in interview format. Major findings included an overall employment rate of about 40% of which 75% were in day programs and few in competitive employment positions. Average number of hours per week worked was about 20 and the average annual income was about $1,500. Most former students lived in group homes, had friends, and maintained regular contact with family members. Contains 20 references. (DB)

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FINAL REPORT

Grant Number: G008435056

Evaluating Post-School Transition of Secondary Students With Moderate to Severe Handicaps

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March, 1988

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ABSTRACT

From October 1984 through December 1987, the National Institute of Disability Rehabilitation and Research, formerly the National Institute of Handicapped Research, funded a grant for a project entitled "Evaluating Post-School Transition of Secondary Students With Moderate to Severe Handicaps." This project had four primary proposed activities: (a) development of a follow-up system that is feasible for schools to use to obtain information on individuals with handicaps who leave school, (b) data collection on three special education samples (prospective sample in last year of school, retrospective sample out of school for 3-5 years, and retrospective sample out of school for 8-10 years), (c) data analysis to evaluate long-term effects of secondary programs and feasibility of the follow-up system for school use, and (d) dissemination of research findings and follow-up procedures. During the three years of the project, extensive developmental, data collection, and analyses activities were completed. In addition, this project's activities provided the basis for continued follow-up and intervention endeavors in the school system. This final report on the project provides the following summary information: (a) objectives, (b) personnel, (c) major activities and findings, and (d) products from project activities.

INTRODUCTION

The Post-School Transition Study was funded in 1984 to conduct an extensive study of individuals with moderate to severe handicaps who recently left secondary special education programs, and to address the related purposes of (a) comparing the transition of individuals with handicaps who have different characteristics (e.g., time out of school, severity of handicap, level of adjustment), (b) examining the implications of follow-up information for improving school programs, and (c) developing a system that can be used at the school building and school district levels to obtain follow-up information on special education students in their programs. The need for these activities grew out of the relative newness of public school programs for students with moderate to severe handicaps and the lack of evaluation systems feasible for schools to use.

Programs for students with handicaps in secondary public schools, especially programs for students with moderate to severe handicaps, have mushroomed in the recent past. To a great extent, programs were developed and provided in response to Public Law 94-142 because students who were formerly in institutions, in day programs operated by various public and private agencies, or at home had to be provided with a free, appropriate education in the public schools. To date, there has been limited opportunity for schools to follow-up on students who have passed through their programs.

In contrast, there have been several studies of the success of special projects in providing individuals at the secondary and post-secondary levels training in skills that help them become employed and productive (cf. Cho & Schuerman, 1980; Hill & Wehman, 1983; Walls, Tseng, & Zarin, 1976). A study by the Office of Program Inspections (1983) indicated that several specific programs for individuals with severe handicaps have successfully provided transition mechanisms for students to move from high school to adult services. The programs appear to be unique in their ability to document what has happened to students in their programs and the relationship between benefits derived

from the programs and costs associated with the programs. In many cases, the evaluation mechanisms for these programs were provided by consultants from universities. In addition, the programs were set up as "models," often receiving special funding for an evaluation and follow-up component. These "advantages" are not available to most public schools trying to serve their secondary-level students with handicaps.

It may be that the literature related to special programs for individuals with moderate to severe handicaps has obscured the need for data on typical services being provided by local public schools. A recent survey of the literature identified only four studies since 1984 on the status of former students of public school programs that included individuals with moderate to severe handicaps. Edgar (1987) found that school retention was much greater for students with severe handicaps (12% drop out rate) compared to students with learning disabilities and behavior disabilities (42% drop out rate). Yet, approximately six months after leaving school in 1984-85, 65% of the former students with severe handicaps were not engaged in any activity; 18% were involved in further schooling and 29% were employed. An earlier follow-up reported by Edgar and Levine (1986) showed that for 181 students with severe handicaps, 9% were involved in further schooling and 39% had a job. This current study also provided some information about living arrangements (69% lived with their family), friendships (28% of parents reported their child did not have friends) and legal problems (2% were reported to have had problems with law).

A study by Hasazi, Gordon, and Roe (1985) also included some students with more severe handicaps, as defined by their enrollment in special classes in high school. (It should be noted that this is a lenient definition; the actual sample probably included some students who would be considered to have mild retardation.) Students followed were ones who had left school between 1979 and 1983. Follow-up data showed that approximately 30% were employed. Wehman, Kregel, and Seyfarth (1985) investigated the

employment status of 117 transition age adults who had participated in public school programs for persons with moderate, severe, or profound mental retardation and who had left school between 1978 and 1983. They found that approximately 21% were employed; 9% were in sheltered workshops and 12% were in competitive employment, either full or part-time.

The Ninth Annual Report to Congress on the Implementation of the Education of the Handicapped Act (U.S. Department of Education, 1987) confirms that there is a continuing need to focus on the transition of individuals with moderate to severe handicaps from public school programs to adult life. The Report notes that services for older students, especially those between 18 and 21 years of age, are in need of improvement second only to the needs of preschool children. Particularly noted were needs related to vocational assessments, prevocational courses, and staff trained to deal with transitional students. When identifying particular groups of students with handicaps in need of services and programs, the Report indicates that states most often listed students with severe and profound handicaps.

Thus, local schools and rehabilitation agencies continue to need evaluation data and evaluation systems that will help them to identify implications for modifying their programs and improving transition services. Such systems are urgently needed to assist schools, families, and adult service agencies in the development of effective plans to facilitate transition from school to adult service programs, as well as in identifying social supports needed by persons with moderate to severe degrees of mental retardation. Not until schools and rehabilitation agencies have data on individuals with handicaps who have left school will they be able to conduct needed program evaluations such as cost effectiveness and benefit-cost analyses. What currently is missing are data on the economic and social functioning of young adults with handicaps and the costs to society of services and inactivity. Without such baseline information, more sophisticated analyses

of activities through means of cost effectiveness and benefit-cost analysis procedures cannot be achieved.

Effective programs, both at secondary and post-secondary levels, require the development of important and timely evaluation data on outcomes of schooling and adjustment of young adults with handicaps. There is particular need for studies focusing on the critical transition years when individuals enter young adulthood, and for information on the adjustment of older cohorts. Such information would provide a sound empirical foundation for improving secondary programs, for developing critical transition programs for students leaving schools, for structuring more complex evaluations and for identifying continuing needs of people for structuring more effective school and rehabilitation services.

The collection of these kinds of data was the focus of activities completed for the Post-School Transition Study. The study incorporated descriptive research, comparative research, and longitudinal research, and included three primary samples of young adults with moderate to severe handicaps -- those just completing school, those who had been out of school for less than five years, and those who had been out of school for more than five years. The first group allowed for direct client assessment, particularly in the area of adaptive functioning, as the individuals were about to leave school (this sample was followed longitudinally). The other two groups allowed for follow-up at two intervals after departure from the school program. All groups allowed for comparisons of outcomes as a function of time and according to severity of handicap, gender, and other demographic variables.

RESEARCH OBJECTIVES

Nine specific research objectives were addressed by the Post-School Transition Study. The objectives were:

Objective 1: To produce data on the vocations, earnings, living arrangements, adaptive functioning, community adjustment, costs of special education services and other pertinent variables, for students with moderate to severe handicaps who are leaving school and for those who have been out for school for 3-5 years and for those who have been out of school for 8-10 years.

Objective 2: To provide a comprehensive description of the frequency with which various post-school outcomes occur for individuals with moderate to severe handicaps.

Objective 3: To produce research findings on the transition of secondary-level students with moderate to severe handicaps from school to adult life.

Objective 4: To produce longitudinal research findings on the transition of secondary-level male and female students with handicaps.

Objective 5: To assess the relationships between adaptive, functional characteristics and problem behavior measures upon release from school and later adjustment.

Objective 6: To produce longitudinal research findings on the transition of secondary-level students with handicaps to assist in evaluating school outcomes and in improving school and post-school service programs.

Objective 7: To identify the types of outcome data needed to conduct follow-up evaluations of programs.

Objective 8: To develop a feasible system for local school buildings and districts to use to obtain follow-up information on individuals with handicaps who leave school.

Objective 9: To identify the ways in which educators and rehabilitation service counselors can use results from their own follow-up information to improve individual case planning and overall program planning.

The timeline for these activities covered a three-year (36-month) period. Activities were arranged into four phases. Phase I, which included surveys, literature analysis, and the development of a follow-up system, was proposed to occur during a three-month period. Phase II, which included subject identification, the direct assessment of students, and follow-up interviews, was proposed to occur during a 24-month period, starting at the beginning of the project. Data analyses (Phase III) were proposed for Months 19-30.

The final three months of the project (Months 31-36) were proposed for completion of feedback and dissemination activities.

The proposed timeline was extended by three months due to longer than expected time required to locate samples and collect follow-up information. In addition, several sophisticated multivariate statistical analyses were explored to see whether more complex relationships could be tested to identify the primary dimensions of community adjustment.

PERSONNEL

The Post-School Transition Study was directed by Robert H. Bruininks. Dr. Bruininks is Professor of Educational Psychology, Director of the Center for Residential and Community Services, and Director of the Minnesota University Affiliated Program on Developmental Disabilities. Dr. Bruininks has extensive experience in research, evaluation, and administration related to educational and human service programs. For two years he served as director of the Minnesota Developmental Disabilities Office.

Dr. Bruininks has directed extensive national research studies on residential services and related services for developmentally disabled people which have provided important information to many federal agencies, including the Department of Education, the Office of Planning and Development, and ADD in OHDS. Dr. Bruininks collaborated with Mathematica Policy Research in a national experimental benefit-cost evaluation of employment training for adults with mental retardation. He has directed many large scale survey research and evaluation studies and published extensively on special education and human services issues.

Management of day-to-day project activities was the responsibility of the project's Research Coordinator, Martha Thurlow. She has over 14 years of research experience, with strong emphasis on evaluation-related issues in special education. She has served as research coordinator and study site liaison on major long-term research projects and has directed large-scale dissemination activities in two institutes devoted to research on children with handicaps. She has published extensively and has served as consultant to several community educational programs.

The Field Site Coordinator for the project was Cheryl Lange. She has several years of experience as a special education teacher and developer of school curriculum materials. The project's computer specialist was Bradley K. Hill. He has an educational background in both economics and educational psychology and is experienced in computer technology

and statistical analyses. He also has extensive experience in translating statistical results into practical information for both professionals and lay people. He has published extensive research on services for people with handicaps. Mr. Hill assisted in technical aspects of the research throughout the project, with primary emphasis on data analysis.

A School Task Force and Project Steering Committee provided input on feasibility issues related to both the collection of school record information and the content of the follow-up interview. The School Task Force also contributed to subject identification and selection procedures. The composition of the School Task Force and Project Steering Committee changed somewhat over time, but included key individuals in schools and state education agencies as well as project staff members.

Several student personnel also worked on the Post-School Transition Study. These individuals were supported as Research Assistants, Graduate School Fellows, or Psychometric Assistants.

SUMMARY OF PROJECT ACTIVITIES

Project activities were designed to meet nine basic objectives and were completed within four phases over a three-year period. The primary project activities were: (a) Survey of practitioners about needed follow-up information; (b) Development of follow-up instrument; (c) Collection and analysis of follow-up information; and (d) Identification of feasible follow-up procedures for schools to implement. A summary of project accomplishments related to each of these activities is provided here.

Survey of Practitioners

A brief survey was developed to obtain input from special education directors and rehabilitation counselors on the variables they believed to be critical when following students who have left their secondary special education programs. The survey included three questions on a single page; these asked respondents to list the major types of post-school follow-up information they believed necessary to evaluate instructional programs for secondary special education students and the information they believed should enter into cost-effectiveness and benefit-cost analyses of programs for secondary special education students, as well as basic demographic information about the respondent's school district.

Surveys were sent with a cover letter to 166 special education directors, vocational counselors, rehabilitation counselors, and professionals in the field of special education and vocational education research, and to 23 directors of projects providing services to adolescents and young adults with handicaps. These letters were followed, after a two-week interval, by a reminder postcard. The final response rates for the two groups were 31% (n=52) and 57% (n=13), respectively. The respondents reflected a wide range of areas served, number of secondary-level pupils overall, and number of secondary level pupils in special education.

For the item on needed follow-up information, respondents gave suggestions that

could be organized into five basic categories: employment, descriptive, school/program, post-secondary training, and social adjustment. Across all responses, the most frequently occurring category was employment, with at least three times as many responses falling in this category as in any other category. It was the most frequent response for every respondent group (e.g., special education directors, rehabilitation counselors, etc.). Most of the responses referred to employment status variables rather than to job satisfaction, job stability, or work behavior. Each of the other categories had less than 16% of all responses. Follow-up information on the social adjustment of special education students was the category of information mentioned least often (10%) as being necessary to obtain to evaluate instructional programs. The social adjustment variable was mentioned by a much greater percentage of special education directors than any other group.

For those responses rated for feasibility, most were rated as feasible to obtain. The highest percentages rated as feasible occurred in the categories of post-secondary training, school/program, and descriptive information. Just 64% of the employment responses that were rated were considered to be feasible to obtain, and only 50% of the social adjustment responses were considered to be feasible.

For the item on types of information that should be used when analyzing the cost-effectiveness or benefit-cost of programs for secondary special education students, responses were organized into nine basic categories: employment, school/program, descriptive, post-secondary training, costs to society, social benefits, monetary benefits, social adjustment, and other. Employment was the most frequently occurring category, overall, and across all professional groups. It had at least three times as many responses as any of the other categories. As was the case with the follow-up question, most of the employment responses referred to employment status variables rather than to job satisfaction, job stability, or work behavior. All other categories had less than 14% of all responses. Information on the social adjustment of special education students was the

category of information mentioned least often as being necessary to obtain for examining the cost-effectiveness of a special education program. This was also the case for the follow-up question. Feasibility ratings of these responses indicated that most respondents believed they were feasible to obtain. The highest percentages rated as feasible occurred in the categories of social benefits, monetary benefits, social adjustment, and other, with 100% rating the collecting of such information as feasible. Just 50% of the employment responses that were rated were considered to be feasible to obtain and none of the cost to society responses were considered to be feasible.

Thus, the survey results indicated that professionals who work with youth and adults who have handicapping conditions consider employment and vocational success as key elements of successful post-school adjustment. The lack of perceived need for information related to social adjustment or behavioral characteristics of individuals with handicaps after they have left secondary special education programs perhaps reflects the emphasis placed on academic and vocational subjects within the secondary level special education curriculum. It is interesting that despite recent evidence of the importance of behavior and social adjustment in the quality of life, it is not given much emphasis in either our school programs or in our evaluations of post-school success.

Development of Follow-up Instrument

The development of the follow-up instrument was based on the integration of input from (a) the School Task Force and Project Steering Committee, (b) the survey of practitioners, and (c) a literature analysis of research and theoretical literature on vocational outcomes and community adjustment. The literature analysis identified relevant follow-up studies that used interview or questionnaire techniques. The instruments used in those studies were analyzed and a matrix developed on which instruments had items in various topic areas (see Table 1). When possible, items were selected or revised from existing instruments in order to maximize comparability of data

Table 1

Summary of Areas in Which Information Was Reported for Eight Follow-up Studies[a]

Area/Subtopic	Study[b] ED	FA	HA	MI	SC	SE	WE	ZI
Employment								
Current job status	•	•	•	•	•	•	•	•
Current earnings	•	•	•	•	•	–	•	–
Satisfaction	–	–	–	•	–	–	•	–
How found job	•	–	•	•	–	•	•	–
Previous job	–	•	•	•	•	•	•	–
Job search	–	–	•	–	–	•	–	–
Education								
Current status	•	•	•	•	•	–	–	–
Job training	•	–	•	–	–	–	–	–
Financial Integration								
Support income	–	–	–	•	•	–	–	–
Pay taxes	–	–	–	–	–	–	–	–
Banking	–	–	–	•	–	–	–	–
Shopping	–	–	–	•	–	–	–	–
Social Integration								
Leisure activities	–	–	–	–	–	–	–	–
Marital status	–	–	•	•	–	–	–	–
Friendships	•	–	–	–	–	–	–	–
Living arrangements	•	–	•	•	•	–	–	–
Votes	–	–	–	–	–	–	–	–
Legal Problems	•	•	–	–	–	–	–	–
Driver's License	–	–	–	•	–	•	–	–

[a]A "•" indicates that some kind of information (no matter how minimal) was collected and reported in the citation. It should be noted that some investigation reports focused only on one aspect of the information collected (e.g., Zigmond focused on dropouts compared to graduates) and thus the citation included here may not have reported all types of information that were collected.

[b]Studies are identified as follows: ED = Edgar et al. (1985), FA = Fardig et al. (1985), HA = Hasazi et al. (1985), MI = Mithaug et al. (1985), SC = Schalock et al. (1986), SE = Semmel et al. (1985), WE = Wehman et al. (1985), ZI = Zigmond & Thornton (1985).

sets across studies.

The final form of the follow-up interview that was developed for the Post-School Transition Study included 142 items that covered work activities (28 items), past employment (15 items), job search skills (7 items), education and training (14 items), day programs (19 items), living arrangements and social participation (13 items), support, family, and household information (17 items), citizenship (6 items), support programs (8 items), and social adjustment/living skills (15 items). The interview was organized in a branching format so that irrelevant items need not be asked. The typical administration time for the interview was 30-45 minutes.

When the interview was in its final form it was submitted to various groups to be critiqued for its content and readability. These groups included the task force; university professors, research staff, and graduate students; parents and care providers of adults with mental retardation; and special educators. All groups made suggestions and the interview was changed accordingly. When a final draft was nearing completion, pilot interviews were arranged to determine the length of the interview in an actual interview situation and to determine the readability of the various questions. A few additional changes were made to the survey at this time. The writing of the survey interview, along with the critiquing and pilot interviews, took approximately six months.

In addition to the project interview, the Inventory for Client and Agency Planning (ICAP) (Bruininks, Hill, Weatherman, & Woodcock, 1986) was used to collect additional information related to adaptive and problem behaviors, functional limitations, diagnostic status, data on support services and social-leisure activities, and other personal characteristics of subjects. This was administered along with the follow-up interview.

Collection and Analyses of Follow-up Information

Three primary groups of subjects were included in the study: (a) prospective group, (b) retrospective group out of school 3-5 years, and (c) retrospective group out of school 7-10 years. The Retro 7-10 group consisted of students who had completed their special education program 7 to 10 years prior to the beginning of the study (1975-1978). The Retro 3-5 group had completed their education three to five years prior to the study (1980-1982). The Prospective group was included in the longitudinal part of the study. These subjects had either completed their education the year prior to the commencement of the study or would be completing their schooling the year the study began. All subjects were students in a midwestern city school district who were classified as having moderate to severe retardation. The total number of students identified for inclusion in the study was 95; of these, 87 students (91.6%) were located and completed the study. For the Prospective group, a comparison sample of students who left school in the same years who had mild handicaps was selected. Of the 18 students identified for the Mild group, 8 participated in the study.

Considerable time was spent locating subjects in all groups. The Retro 7-10 Group had a response rate of 27 out of 31 (87%). Within this group, three could not be found and there was one refusal. The Retro 3-5 Group originally had a response rate of 39 of 43 (90.7%). In this group, two could not be located, one refused to be involved and one subject was deceased. Since the subjects in this group had been selected by identifying a random sample of the students with mental retardation in a particular year, a random numbers table was used to replace the two students who could not be located. They were substituted for two students in the 1981 class who were considered to have severe retardation and who could not be located. When those two were then substituted into the group, 41 of 43 (95.3%) were located. In the Prospective group, 19 of 21 (90.5%) completed the study. There were two refusals and one subject could not be located.

It was more difficult to locate subjects for the contrast group due to the unavailability of addresses and to the fact that individuals in these groups did not reside or work in facilities for individuals with handicaps. In the level 3 Mild Group, 5 of the 13 (38.5%) identified students were located and interviewed. Six students could not be located and 2 students refused to be involved in the study. In the level 5 Mild Group, 3 of 5 subjects (60%) were found and interviewed. Two of the subjects could not be located.

The final subject groups included 13 males and 14 females in the Retro 7-10 group, 16 males and 25 females in the Retro 3-5 group, 14 males and 5 females in the Prospective group, and 7 males and 1 female in the Mild group. In the Retrospective groups, 30 were considered to have moderate retardation and 38 were considered to have severe retardation. In the Prospective group, 12 were considered to have moderate retardation and 7 were considered to have severe retardation.

The post-school outcome data were summarized for the three groups of students with moderate to severe handicaps (Retro 7-10, Retro 3-5, Prospective) and also for the Mild contrast group. Statistical comparisons were made among the three groups of students with moderate to severe handicaps, and among subgroups of them. The results for the mild group were summarized basically as an anchor point or reference point for the results of the moderate to severe groups (both the Prospective and the Mild groups had been out of school just one to two years at the time of the follow-up survey).

In addition to the outcome analysis, a multivariate factor analysis was conducted to explore the primary dimensions of community adjustment tapped by the Project follow-up questionnaire and the ICAP. Furthermore, a cost analysis was conducted to explore the costs of providing special education services to students with moderate to severe handicaps.

All results of the summaries and analyses are presented in detail in separate project

reports (see next section). Only primary findings are summarized here.

Primary outcome results. Overall, the groups of students with moderate to severe handicaps were employed at about a 40% rate, a slightly higher rate than reported in earlier studies (Cho & Schuerman, 1980; Edgar & Levine, 1986; Hasazi et al., 1985; Hill & Wehman, 1983). Approximately 75% were in day programs. Few were in competitive employment positions. The average number of hours per week on the job was about 20, and the average annual income for the former students with moderate to severe handicaps was about $1500 ($1700 for Retro 7-10 and Prospective; $1200 for Retro 3-5). Few enjoyed any tips, bonuses, raises, or promotions in their jobs.

One of the unique aspects of the current outcomes study was that it included post-school adjustment factors beyond simple employment data. Living arrangements involved primarily group home residential placements for students who had been out of school more than two years; former students who had just left school (Prospective group) were divided almost equally between living with parents, and being in a supervised residential placement. Only one former student, one who had been out of school 7-10 years, lived independently. None of the former students had children. The former students maintained frequent regular contacts with their families for the most part. The exception was former students in the Retro 3-5 group. In all groups except the Prospective group, the majority of former students were considered to have friends. While relatively few of the friends were described as staff from their residences or as volunteer/citizen advocates, it was also found that relatively few former students had regular social contact with nonhandicapped persons who were not staff or family members.

While former students participated in a number of leisure activities, respondents thought they would like to participate more than they do, particularly in sporting events (either participating or watching). Lack of transportation was the primary factor

identified as the reason former students were unable to do the cited leisure activities. Much variation was found in the rates with which former students were involved in various citizenship endeavors such as voting (7% to 33%) and paying taxes (0% to 12%).

Few subjects received no type of support payments (3% to 4%). In addition, Medicaid was used most often by the former students (59% to 74%). Few used food stamps. Although the former students often went shopping, few bought things on their own (23% to 35%), few had checking accounts (5% to 25%) and none used them independently. In general, the former students continued to rely on special transportation to get around. Telephoning skills also were limited to some extent for the Retro 3-5 group (47%) and the Retro 7-10 group (56%).

Additional analyses of subgroups led to the following general conclusions about post-school outcomes for students with severe handicaps.

- Differences appear among groups as a function of the amount of time out of school. Those who have been out longer show some signs of greater integration, such as having more friends and being in their current job for a longer period of time. Those out of school for shorter amounts of time show signs of greater reliance on support systems, such as SSI and welfare support.

- Differences are not evident between males and females in these groups.

- Differences appear for groups that vary in their level of functioning (mild, moderate, severe), but many are due to the group of students with mild degrees of mental retardation. These students were more likely to be registered voters, to have driver's licenses, to ride public buses rather than relying on someone else to drive them, and to not be receiving any government support payments. However, those employed also were less likely to be satisfied with the pay they received. Students with moderate degrees of retardation were more likely to live with their parents than were students with severe mental retardation; they were more likely than either those with mild or severe retardation to have played cards or games with others, and to ride either a special bus/van or public bus rather than rely on some relative or friend to drive them. Students with severe mental retardation were more likely to have regular contact with their fathers than students with moderate retardation, and they more often depended on someone to drive them or they rode a special bus/van rather than a public bus.

- When only those students just leaving school are compared, as expected, many differences appear that indicate greater independence and integration

for those with mild retardation. For example, they engaged in several leisure activities more often than students in the moderate-severe group (attend dances, visit friends), they were more likely to pay taxes and not receive government support payments, and to use the phone on their own. Students with mild retardation were more likely to manage their own transportation while students with moderate-severe retardation more often relied on parents or friends, or rode a special bus/van. These differences, however, must be viewed with some caution because of the small numbers of former students in the mild group and the fact that these students who agreed to participate represented only 44% of the students identified for participation.

Primary factor analysis results. Approximately 250 variables were used in the interview instrument and the ICAP to gather information on the community adjustment of former students. From these measures, 21 broader measures were extracted from the project interview and the ICAP for inclusion in exploratory factor analyses. These variables included additive scales of items related to: (a) economic independence, (b) variety of friends, (c) community social recreation leisure, and (d) need for social support, as well as measures of monthly income, number of friends, and income support amount. Principal components analysis of the 21 variables followed by varimax rotation indicated that six eigenvalues were greater than one, suggesting that at least six factors should be extracted. An eight factor solution appeared most meaningful, however, in interpreting the data. In the area of personal competence, four consistent factors emerged. A Personal Independence or general adaptive behavior factor (Factor 1) was identified by primary loadings for the ICAP adaptive behavior clusters (i.e., Personal Living, Community Living, Social/Communication, and Motor Skills). Consistent with the Personal Independence factor interpretation were the high loadings for the Need for Social Support and Economic Independence variables. Factor 2 was defined by the three ICAP maladaptive behavior indexes, and appears to represent a general Maladaptive Behavior or emotional competence dimension. The remaining two personal competence factors appeared to represent different aspects of physical competence. Factor 3 was defined by the Physical Mobility and Need for Health Care scales created from the ICAP.

This factor was labeled Physical Mobility since the two defining scales tapped the extent to which an individual can move freely about the environment without the need for assistance. Finally, Factor 4 was defined by a single loading for the ICAP created Physical Complications scale. This Physical Complications factor appears to reflect the number of significant sensory-physical conditions an individual may have. Although the Physical Mobility and Physical Complications factors are intuitively similar (both tap aspects of physical competence), these factors failed to merge into a single factor in most solutions.

Four community adjustment dimensions were identified. Factor 5 was a Social/Recreation/Leisure dimension, and was consistently defined by the Variety of Friends, Number of Friends, and Recreation/Leisure (Community-Social) variables. This factor appears to represent the extent to which an individual has developed an active social network and the extent to which the individual is actively involved in community-based recreation/leisure activities. When a nine factor solution was extracted, this factor split into separate social (i.e., Variety and Number of Friends) and recreation/leisure (i.e., Rec/Leis-Community Social) factors. This suggests that if other indicators of recreation/leisure activities had been included in the analysis, separate social and recreation leisure dimensions may have been identified (when the recreation/leisure variable was split into two separate subscales this did occur).

Factor 6 was defined primarily by the Number of Limiting Factors and Number of Support Services scales created from the ICAP. This factor appears to define a Social and Service Support dimension of community adjustment. Finally, factors seven and eight appear to represent dimensions of Financial Independence and Community Independence/Integration. Factor 8 was consistently defined by economic/financial variables. This bipolar factor was defined by the degree to which an individual receives external income support (high negative loading for Income Support), in contrast to

positive loadings for variables measuring the degree to which an individual earns income (Earned Income) during daytime activities (Daytime Activities). The seventh factor appears to represent the degree to which an individual is self-sufficient and integrated in the community (i.e., Community Independence/Integration), since it was defined by high loadings for degree of independence in living (Living Arrangement), degree to which the primary daytime activity approaches competitive employment (Daytime Activity), the degree of financial independence (Economic Independence, Earned Income), and the degree to which there is freedom from the need for social and service support (Need for Social Support, Number of Support Services). In a seven factor solution the Financial Independence and Community Independence/Integration factors merged into a single factor.

Primary cost results. Benchmark cost analysis was conducted for the primary school serving students with moderate to severe handicaps. Using a resource component approach, data were collected to determine: the average costs per pupil for instruction per year, per day, and per hour; the total resource costs to society in both cash and imputed values, for all program functions and services; and who bears the financial burden of costs. For comparability with other studies, the costing paradigm was based on 1983-1984 information. Notable findings from the cost analysis were that the annualized total costs for the educational program differed from the printed budget by over 64%, with the budget under-representing costs. At the student level, average costs were $12,606 per year, $66 per day, and $12 per hour.

Identification of Feasible Follow-up Procedures for Schools

Procedural recommendations. Post-school outcome studies employ a variety of survey research procedures. In conducting such studies, it is important to follow as much as possible acceptable steps and procedures of sound survey research. Figure 1 presents a conceptual design for conducting survey research studies. This diagram

describes the survey research process as comprising several related steps, including: (1) decisions on purpose and definitions, (2) construction of instruments (including pilot testing), (3) selection of a sample, (4) administration of the survey, (5) analysis of data, and (6) reporting of results and conclusions. At each stage of the survey research process, a variety of standards must be applied to insure reliable and valid findings. Some of these principles are listed briefly in Figure 2.

Follow-up studies on the post-school adjustment of former students with handicaps generally employ survey research methods. The information reported by researchers about the data collection procedures varies from study to study, and in some cases information is not reported that might be the cause of survey error. A review of past studies illustrates, in many cases, the extent to which accepted survey research procedures are used in studies related to special education services.

Tables 2 presents analyses of reports from post-school follow-up survey research studies. This table reports information reported clearly in a large number of post-school and school leaver studies of former students with handicaps. This summary does not represent an exhaustive analysis of studies, but it does summarize 14 of the more frequently cited and better research studies in this area. The data in this table presents an analysis of information provided in the research survey reports in the following areas: (a) total subjects meeting selection criteria, (b) actual subjects responding, (c) respondents vs. nonrespondents characteristics, (d) contact techniques, (e) payment or other external incentives, (f) elapsed time from the last data collection, and (g) use of control or contrast groups. Other useful information on these studies is also tabulated.

From Table 2 it is apparent that older studies seem to follow reporting conventions as well as more recent ones. In fact, we may have done somewhat better over 20 years ago. In reviewing the Total Column of Table 2, several areas stand out that illustrate inadequate reporting procedures. Reporting on the numbers and characteristics of the

Figure 1. Steps and Processes in Research on Post-School Outcomes

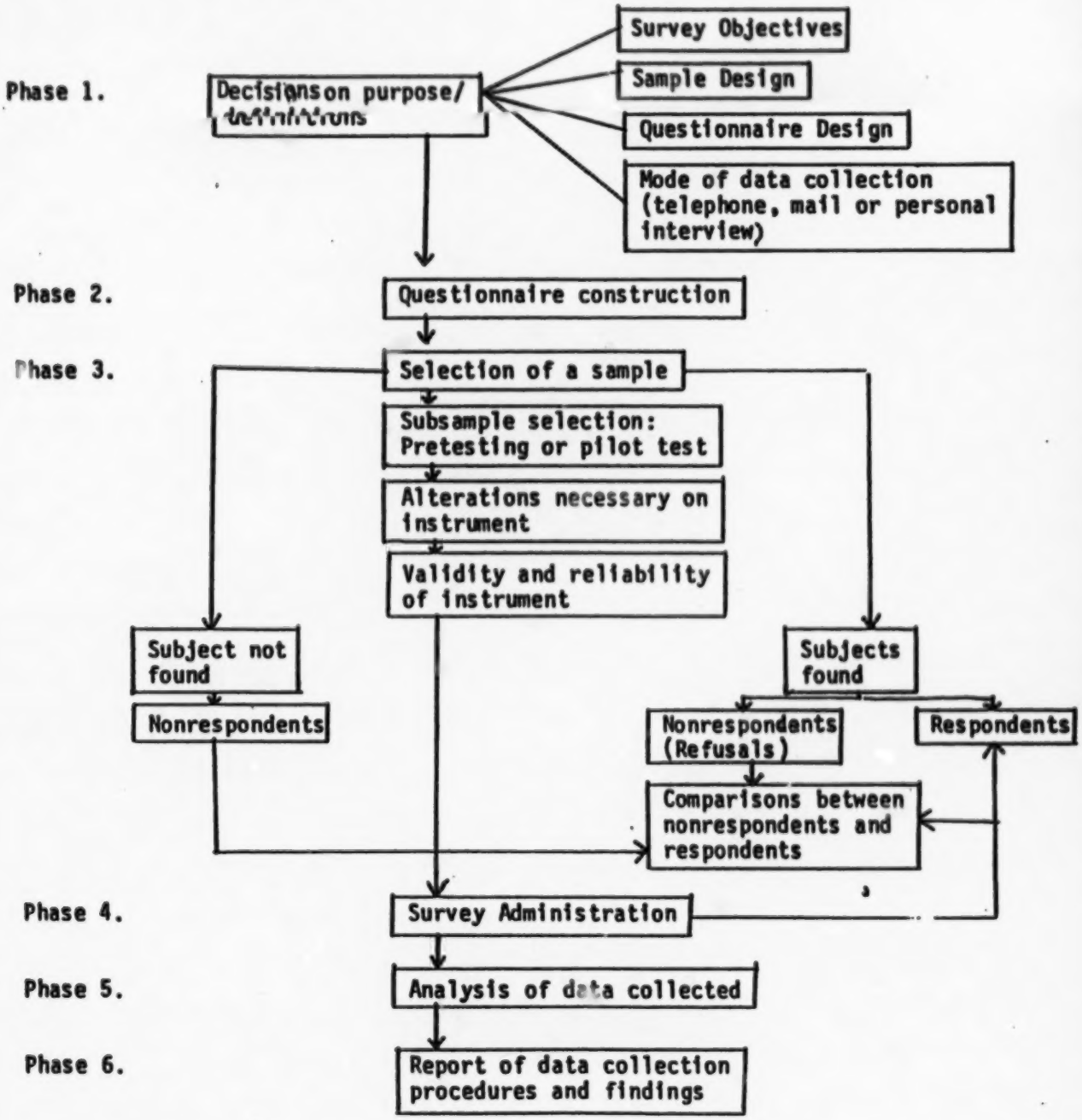

Figure 2. Standards for Conducting Survey Research Studies

- Pilot test or pretest procedures
- Assess and establish validity and reliability of instrument(s)
- Identify and select sample:
  - Total subjects meeting selection criteria
  - Total subjects found that responded to the survey, including a number of refusals
- Calculate and Report Response Rates (Frey, 1983):

$$\text{Response rate} = \frac{\text{Number of completed interviews/questionnaires}}{\text{Number of eligible respondents}}$$

$$\text{Completion rate} = \frac{\text{Number of completed interviews/questionnaires}}{\text{sample size}}$$

Note: The denominator (sample size) in the completion rate formula includes eligible and noneligible respondents (e.g. deceased).

- Compare between respondents and nonrespondents to investigate whether the nonresponding group represents a biased sampling.
- Use a control or comparison group, if feasible.
- Report fully to the readers on the above points and other data collection procedures used in the study, e.g.:
  - Follow up or contact techniques
  - Use of monetary or other incentives
  - Elapsed time in follow-up survey research

Table 2

Summary of Studies Using Accepted Survey Research Reporting Procedures

Reported	Older Follow-up Studies[a]	Current Follow-up Studies[b]	Current Dropouts Studies[b]	Total
Original sample	2/3	1/4	5/7	8/14
Identified sample	0/3	0/4	4/7	4/14
Actual subjects responding	3/3	4/4	7/7	14/14
Response Rate	2/3	3/4	5/7	10/14
Respondents vs. Nonrespondents	1/3	1/4	2/7	4/14
Contrast Group	3/3	0/4	3/7	6/14
Contact Techniques	3/3	1/4	6/7	10/14
Type of Handicap	3/3	4/4	7/7	14/14
Reliability, Validity	0/3	0/4	0/7	0/14
Pilot Test	0/3	3/4	1/7	4/14

[a]Conducted at least 20 years ago.
[b]Conducted within the past 10 years.

original and identified sample was done very inconsistently in published studies. All studies reported the numbers and characteristics of subjects who responded, but four out of 14 studies did not report overall response rates. Very few studies, moreover, assessed differences between respondents and nonrespondents, making it difficult to determine whether respondents were representative of the initial sample. Less than half of the studies used contrast groups or even contrast population (e.g., census) statistics. Contact procedures were described in most studies, and all studies described the type of handicap(s) among respondents. Reliability and validity of instruments and procedures was not established systematically in any of the studies; pilot testing was reported in only 4 out of 14 studies.

This brief analysis illustrates that standards are at best inconsistently applied in conducting and reporting survey research studies of former students with handicaps. This area of research is a most important one for evaluating outcomes of special education services, and for researching important dimensions of personal and social adjustment. It is also a most difficult and challenging area of inquiry. Without sound methodology and reporting procedures, however, the amount that can be learned and generalized from such studies will be decidedly limited.

To take just one aspect of survey research, Fowler (1987) points out that a major source of survey error is the failure to collect data from a high percentage of those selected for samples. This information can be calculated with response rate statistics that consist of the number of people interviewed or responding divided by the number of people originally sampled. The denominator includes all the subjects that meet the selection criteria, but have not responded. The effect of nonresponse on survey estimates depends on the percentage of nonrespondents and the extent to which those nonrespondents are biased. Fowler (1987) considers the standard for a minimum acceptable response rate to be around 75%. Borg and Gall (1983) propose that if more

than 20% of the responses are missing, it is very likely that the results of the study may be altered. This would be the case if the nonresponding group represents a biased sampling (i.e., if the nonresponding persons are systematically different from the responding persons).

Few studies in the special education literature, including our own studies, meet these reporting or response rate requirements. This problem makes it particularly difficult to assess the representativeness of samples compared to study populations, and even more difficult to evaluate a sample compared to a broader population with similar characteristics. Experiences from two follow-up studies conducted by us at the University of Minnesota illustrate this problem of differing response rates. In one study, former students with moderate and severe degrees of mental retardation were followed after leaving school. Of about 90 persons, approximately 90% of them were found and over 90% agreed to participate (80% of the initial sample). In other studies of former students with mild degrees of retardation (N=78), 72% were found and 73% agreed to participate (about 53% of the initial sample). Obviously, we can expect findings of the first study to represent better the characteristics of the original study population. Reporting and evaluating response rates is an important aspect of reporting study results. Without such reports, we run the serious risk of evolving a sociology of the identified and the willing!

Follow up research studies should include the possible sources of survey error in their reports. The response rate should be reported either explicitly (i.e., the percentage itself) or implicitly by reporting both the total number of subjects meeting the selection criteria, and the actual numbers of responding subjects. Moreover, data that investigate differences between the respondents and nonrespondent's characteristics should be included to inform readers whether the nonrespondent group is basically equivalent to the responding one.

Two aspects that may influence the respondent rates of the selected samples are the follow-up or contact techniques such as telegrams, telephone calls, and certified mailings; these procedures are considered to be effective devices for increasing the percentage of responding subjects (Borg & Gall, 1983). The second aspect refers to whether a monetary incentive or another external incentive has been used in order to increase the response rate of potential participants.

Whether the sample followed is contacted after a few or many years another factor that may influence the response rate of potential study participants is either the primary contact or the time they should have been graduated. As the years pass, records can be lost, persons may be more difficult to find (changing addresses, moving to other towns, death, etc.), and refusals to cooperate may increase. Time elapsed until the follow-up contact is made should be another variable to consider in reporting research results. Several other aspects noted previously for survey research studies (see Figures 1 and 2) are quite important in follow-up studies of samples whose level of school achievement was generally lower than average, since they may be less likely to cooperate and respond.

Successful collection of outcome information requires established and routine procedures for tracking students as they leave and after they have left school. The primary requirement that impedes most follow-up efforts is that students must be found after they have been out of the school system for some time. Schools generally have the last known family address for each student. This is helpful unless there is considerable mobility in the target population or the time interval is great between exit from school and follow-up. For students with milder handicaps, these factors create considerable impediments to successful follow-up endeavors. For students with more severe handicaps, these factors usually create only minimal difficulties. One reason is that students with moderate to severe handicaps tend to stay within the service system.

Thus, with time and persistence they often can be located by contacting local service agencies. While this is possible and usually fruitful for finding students with moderate to severe disabilities, it is not the ideal way to proceed. A planful approach to tracking former students is much preferred, and probably necessary for students with milder disabilities. Thus, schools must maintain contact with their former students or the students' caregivers on a periodic basis. Yearly intervals are recommended so that advantage can be taken of post-office forwarding procedures. It is important to remember that substantial difficulty in finding former students will directly lower response rates and probably increase response bias in post-school outcome studies.

The recommendation for a systematic, already-established tracking system is not helpful for those attempting to follow students for the first time. In this case, it is necessary to pursue students in as many ways as possible, including mailings, contacting service agencies, and talking to students' former teachers. For students with milder handicaps, it is often useful to attempt to make contacts through the student-friend network. Students currently in school often know a student from one or two years back, and this student, in turn, may know other students.

Response rates and methods used to increase response rates must be considered when conducting outcome assessments. It has been argued that a 75% return rate is desired (Fowler, 1987). This level seems reasonable for a relatively stable, nonmobile group, such as the students with moderate to severe handicaps. This level is quite high, however, when it is not possible to even locate subjects, such as for students with mild handicaps. It does seem reasonable, however, to require a 50% return rate. Achieving rates of 50% response to surveys is not necessarily an easy task. Former students, especially those young adults with mild disabilities may not wish to recall an association with special education services. It is important, therefore, to consider using various motivators to help increase the survey return rate. At a minimum, the former students

should be provided with stamped return envelopes if a questionnaire format is used. Other motivators, of course, might be used. Among suggested possibilities are cash rewards and lottery-type drawings from among those who return follow-up instruments. For school districts, periodic contacts with former students makes it easier to enlist cooperation with follow-up studies.

Another consideration is the degree to which there is response bias once returns have been obtained. One way to begin to measure this source of error is to compare a common set of information on those who participated and those who did not participate in the survey. For schools, a logical choice of data on which to make comparisons is school record data. Obvious choices include graduation rates, grade point averages, and absenteeism rates. More relevant for groups with more severe handicaps could be test scores at exit from school. If there are significant differences between respondents and nonrespondents on these variables, one might assume some degree of response bias. Finding some initial differences on such measures does not necessarily invalidate the study, but it may become desirable to statistically correct for initial differences or at least to evaluate findings in relationship to initial sample characteristics.

Schools also must consider the reliability and validity of survey items. In other words, each item must produce the same information if repeated and must reflect what is intended to be measured. These are psychometric characteristics that must be merged with considerations about responding tendencies of subjects. For example, a direct question on amount earned per hour will produce the best and most usable information <u>if</u> it is answered. However, subjects are less likely to answer this kind of item than an item that requires them to mark a category encompassing their hourly incomes. This fine line of balance is critical in the successful collection of outcome information. Successful follow-up surveys require that such issues be assessed through carefully constructed follow-up studies. If former students are interviewed directly, the researcher should

consult literature on interviewing procedures (see Sigelman et al., 1981, for a discussion of these issues in interviewing persons with mental retardation).

Data collection protocals. The interview instrument used in the current investigation was quite extensive and time consuming to complete. Schools very likely will not have the time, the personnel, nor the interest in collecting this kind of extensive information. In fact, much of the information is not necessary for school assessment of former students' outcomes. For example, information on previous jobs and on previous living arrangements probably is not required. Furthermore, extensive data on which days of the week a former student works or how often the student engages in various leisure activities may not be needed. We would argue, however, that schools need to assess more than employment of former students. Key issues that should be included relate to the former students' independence, both financially and socially. The extent to which support is required and the nature of the former student's social networks are also considered to provide useful information for schools to use in planning programs.

In light of the hypothesized needs of schools for assessing the post-school outcomes of former students, suggestions have been made for revising the interview used in the Post-School Transition Study. The outline of the revised interview is shown in Table 3. This suggested outline is based upon the desirability of assuring continuity with previous research on the post-school outcomes of former students in special education programs (see Table 1), the evaluation of persons who would use such information to improve services (see previous key informant survey results), and statistical studies that verify primary constructs of community adjustment (see preceding section). Many of the items cited in Table 3 have been assessed through the use of mail questionnaire survey procedures (Bruininks, Lewis, & Thurlow, 1988).

The research results derived from this project, as well as other research (Bruininks,

Table 3

Proposed Outline for a Revised Follow-up Interview for School Use

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A. Demographic Information

1. Subject's name and birthdate
2. Respondent's name, relationship to subject, and years known
3. Interviewer name and date of interview

B. Current Activities

1. Does subject work? If yes:
   a. How long?
   b. Type of job (competitive, sheltered, work/day activity center, volunteer, other)
   c. Average income per month
   d. Additional job benefits (tips, bonuses, health coverage, insurance)
   e. Satisfaction with job
   f. Ever unemployed?
2. Is subject a full-time student or in job training? If yes:
   a. Type of program (job training, community college, college)
   b. Average hours per week
   c. On waiting list for another program? If yes, how long?
3. Is subject a day program participant? If yes:
   a. Type of program (work opportunity, work activity, etc.)
   b. Average hours per week attend
   c. On waiting list for another program? If yes, how long?
   d. Satisfaction with day program
4. Is subject not working and not in education or day program? If yes:
   a. Is subject not working because is full-time homemaker?
   b. Is subject not working because is unable to find work? If yes, how long unemployed?
   c. Is subject not working because is disabled (getting SSI benefits)?
   d. Is subject not working because doesn't want to?

C. Living Arrangements, Family and Friends

1. Where does subject live? (alone, parents, foster parents, relatives, friends, spouse, halfway house, apartment training, residential placement < 6, residential placement >6, institution).
2. On waiting list for another living arrangement? If yes, how long?
3. Satisfaction with living arrangement
4. Married?
5. Children? If yes, how many?
6. How often see relatives per month?
7. Number of close friends and where met each

Table 3 continued

D. Community Involvement

1. Three most frequent free-time activities
2. Registered voter?
3. Pay federal income taxes?
4. Problems with law or police?
5. Use telephone to talk to:

    a. Relatives?
    b. Friends?
    c. Businesses?
    d. Social organizations?

E. Financial Independence

1. Receive support payment:

    a. How much SSI/month?
    b. How much Disability/month?
    c. How much Welfare/month?
    d. How much other/month?

2. Receive medical payments:

    a. Medicare?
    b. Medicaid

3. Receive food stamps?

4. Has checking account? If yes, uses it independently?

5. Has savings account? If yes, uses it independently?

6. Goes shopping? If yes, pays for purchases independently?

Thurlow & Gilman, 1987; Bruininks & McGrew, 1987), argue for the inclusion of well developed and standardized measures of adaptive functioning and personal competence. Based upon this research, we would recommend that school districts strongly consider use of the Inventory for Client and Agency Planning (Bruininks et al., 1986).

The Inventory for Client and Agency Planning (ICAP) is a 16 page client assessment booklet that gathers information useful for planning and evaluating services to people with disabilities. A completed ICAP yields identifying information, a description of diagnostic and health status, normative scores for adaptive behavior and problem behaviors, information on services received and projected service needs, and data on family/leisure/social activities. The ICAP is suited for screening and eligibility determination, for initial assessment, for program planning, for monitoring and evaluation, and for use as the basis of a management information system regarding residential and in-home support services, nursing homes and related services, educational programs, and various daytime habilitation and work training programs for handicapped and disabled individuals. The ICAP covers each of the following areas (see Figure 3):

- Diagnosis, Personal Characteristics, and Functional Limitations: Provides detailed information on demographic and diagnostic status, medical and physical characteristics, and limitations in vision, hearing, mobility, and health.
- Adaptive Behavior: Contains 77 carefully developed adaptive behavior items organized into four domains of independence: "Motor Skills", "Social and Communication Skills", "Personal Living Skills", and "Community Living Skills". The adaptive behavior section provides a variety of normative scores (age scores, percentile ranks, standard scores) by domain and for total independence.
- Problem Behaviors: Consists of eight categories of problem behavior organized to provide a profile of maladaptive behavior. The problem behavior assessment yields information on specific maladaptive behaviors exhibited by an individual, the severity and frequency of occurrence, and the behavior management procedures most often used in response to problem behavior. Normative scores include four special indexes: Internalized Maladaptive Index; Asocial Maladaptive Index; Externalized Maladaptive Index; and General Maladaptive Index.
- ICAP Service Score: The ICAP Service Score combines adaptive behavior and maladaptive behavior scores to yield an overall measure of a client's need for care, support, supervision or training. The ICAP Service Score was developed in recognition of the fact that adaptive and maladaptive behaviors interact and that

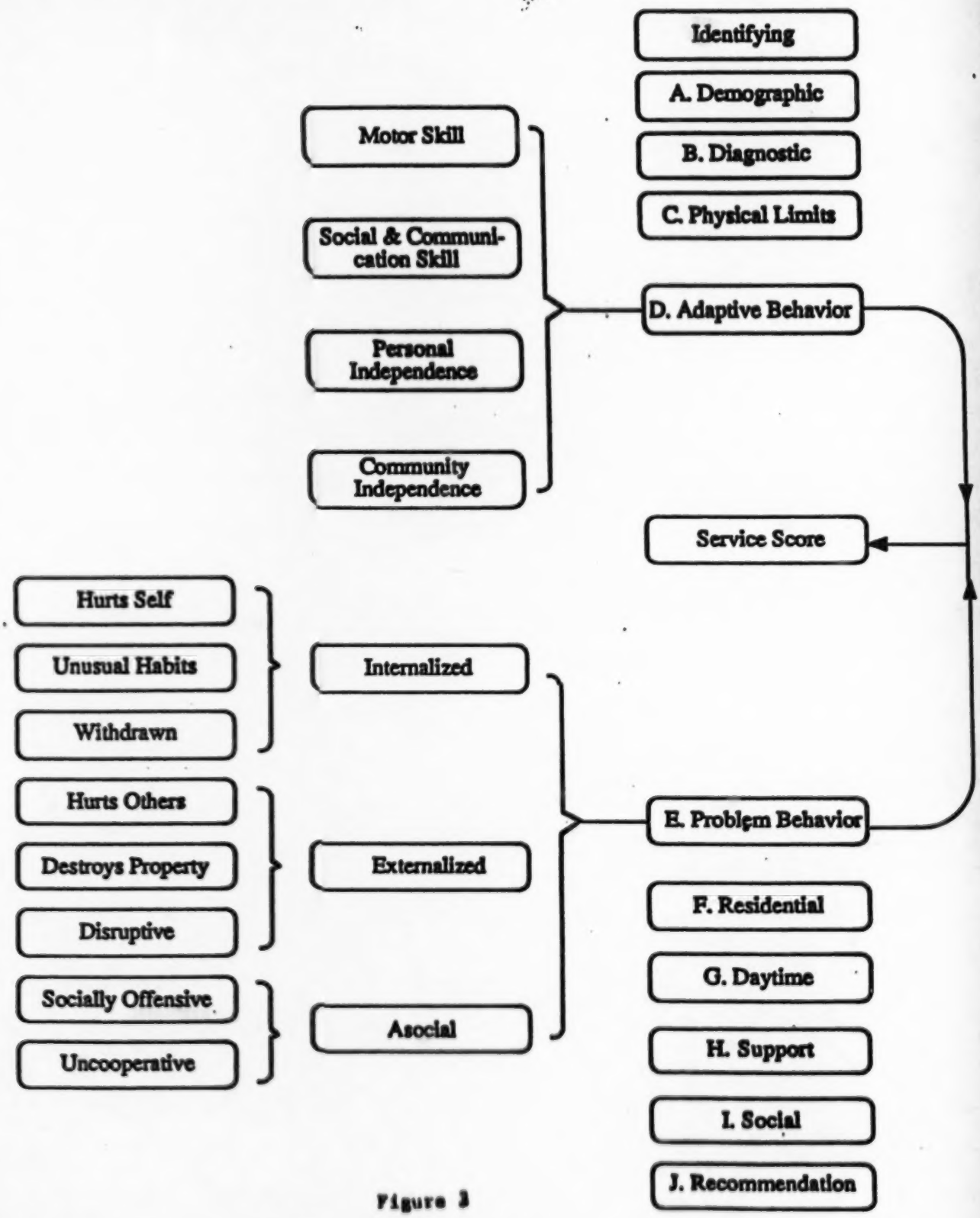

Figure 3

Content Areas of the ICAP

neither score alone is sufficient to predict service intensity required.

- Services: Gathers information about residential, habilitative, and therapeutic support services and social support received at the time of assessment, and a projection of future service needs.
- Recommendations: Provides a structured format for recording narrative information and habilitative and service goals.

ICAP items were developed by reviewing extensive literature on the functional assessment of clients and in consultation with professionals from several disciplines, including social workers, direct service staff in a variety of residential and vocational settings, teachers, program managers, physicians, and therapists. Several revisions of prototype items were field-tested, reviewed, and revised in trials with personnel in many settings serving a wide range of clients. Criteria for inclusion of items included clarity, reliability, and usefulness for description and decision making. During the process of standardization, items and instructions were developed to the point at which they were very clear to a variety of respondents.

Normative data for the adaptive behavior and problem behavior sections of the ICAP were gathered from 1,764 subjects in 40 communities distributed throughout the United States. Norms for the ICAP provide the reference information to which a client's performance can be compared and evaluated. The norming sample was selected to be as representative as possible of the United States population from age 3 months to 40 years and older. To achieve such a representation, stratifying variables included sex, race and hispanic status, occupational and educational background (for adults), geographic region, and size of community.

Use of this instrument is recommended for a number of reasons in conducting post-school outcomes research or in assessing the transition needs of students with handicaps. First, it is efficient to use, taking approximately 25 minutes to complete. Second, it has good technical characteristics and has been used extensively in similar studies (Bruininks et al., 1986). Third, it assesses major areas needed to assess the transition service needs

and the outcomes of current and former students. Finally, it has a specially designed software program.

The ICAP Scoring and Database Software is a microcomputer program into which data from ICAP booklets are entered. The program works on an IBM-PC compatible computer with at least one disk drive, 256K of memory, and an 80 column printer. The program checks all data entry for correctness and completeness. It scores the ICAP adaptive and maladaptive sections automatically and prints a three page report for each client. The ICAP database holds up to 4 years of data for each of as many as 9,999 clients (depends on disk capacity). In addition to individual client reports, the ICAP database prints a four page summary report for the entire database, or for selected groups of clients. The program also outputs data in ACSII form that can be used by other computer programs such as SPSS, SAS, RBase, LOTUS, DBase, etc.

PRODUCTS FROM PROJECT ACTIVITIES

Dissemination was identified as an important goal of the Post-School Transition Study. In addition to feedback sessions with school personnel, results from this study have been presented at both national and state conferences. Primary among these were the following:

Thurlow, M. Long-term benefits and costs of special education. Paper presented at Council for Exceptional Children, New Orleans, 1986.

Gilman, C. Implementing transition monitoring procedures at the local level. Paper presented at Council for Exceptional Children, New Orleans, 1986.

Bruininks, R., Gilman, C., & Thurlow, M. L. Post school adjustment of students with mental retardation. Paper presented at Region VIII American Association of Mental Deficiency, Bloomington, MN, 1986.

Thurlow, M., & McGrew, K. Assessing post-school outcomes of severely handicapped. Paper presented at Special Education Evaluation/Research Conference, Minneapolis, MN, 1988.

Bruininks, R. The implications of deinstitutionalization for community adjustment. Paper presented at the 110th Annual Meeting of the American Association on Mental Deficiency, Denver, May, 1986.

Furthermore, data derived from the Post-School Transition Study will be included in an international conference being held in August, 1988:

Bruininks, R. H., McGrew, K. S., Thurlow, M. L., & Lewis, D.R. Dimensions of community adjustment among young adults with intellectual disabilities. Paper presented at 8th IASSMD Congress in Dublin, August 1988.

Project activities and results also have been documented in four project reports:

Practitioners' Views of Follow-up and Cost-Benefit Information Needed to Evaluate Secondary Instructional Programs for Handicapped Students (Project Report 1) by C. Lange, M. L. Thurlow, and R. H. Bruininks.

Post-School Transition of Former Students with Moderate to Severe Handicaps (Project Report No. 2) by M. L. Thurlow, R. H. Bruininks, and C. Lange.

Benchmark Cost Analysis of an Urban School for Students with Mental Retardation (Project Report No. 3) by D.R. Lewis, R.H. Bruininks, and M.L. Thurlow.

Guidelines for Using Follow-up Information in Programming and Planning Decisions (Project Report No. 4) by R.H. Bruininks, M.L. Thurlow, and C. Lange.

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